

EQUALS-EU
EUROPE'S REGIONAL
PARTNERSHIP FOR GENDER
EQUALITY IN THE DIGITAL AGE

WOMEN IN TECH:

BREAKING DOWN BARRIERS TO FEMALE LEADERSHIP

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TABLE OF CONTENTS

TABLE OF CONTENTS	2
LIST OF ABBREVIATIONS	3
ACKNOWLEDGMENTS	4
EXECUTIVE SUMMARY	8
CHAMPIONING FEMALE LEADERSHIP IN THE DIGITAL AGE	16
WORKSHOP 1: STRATEGIC COMMUNICATION TO PROMOTE GENDER EQUITY: TRANSLATING OBJECTIVES INTO PRACTICE	
• EXECUTIVE SUMMARY	17
• KEY MESSAGES	17
• BARRIERS/CHALLENGES	20
• RECOMMENDATIONS	21
WORKSHOP 2: WOMEN'S DIGITAL RIGHTS IN HEALTHCARE	22
• EXECUTIVE SUMMARY	23
• KEY MESSAGES	24
• BARRIERS/CHALLENGES	26
• RECOMMENDATIONS	26
WORKSHOP 3: LEVERAGING STI SKILLS FOR GENDER EQUITY	28
• EXECUTIVE SUMMARY	29
• KEY MESSAGES	30
• BARRIERS/CHALLENGES	30
• RECOMMENDATIONS	32
CONCLUSION	33
PARTNERS	36
BIBLIOGRAPHY	37

LIST OF ABBREVIATIONS

DOT: Digital Opportunity Trust
ESG: Environmental, Social and Governance
EHR: Electronic Health Record
EU: European Union
GSMA: GSM Association
IT: Information Technology
ICT: Information and Communication Technology
IPO: Intellectual Public Offering
ITC: International Trade Centre
ITU: International Telecommunications Union
METU: Middle East Technical University
STEM: Science, Technology, Engineering and Mathematics
STI: Science, Technology, Innovation
W4: Women's WorldWide Web



**WOMEN IN TECH: BREAKING DOWN
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ACKNOWLEDGMENTS

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**WOMEN IN TECH: BREAKING DOWN
BARRIERS TO FEMALE LEADERSHIP**

EXECUTIVE SUMMARY



As the [2020 Report of the United Nations Secretary General on Progress Towards the Sustainable Development Goals \(SDGs\)](#) makes clear, none of the SDGs can be fulfilled until SDG5 (Gender Equality) is achieved. Inequalities perpetuated in the digital world significantly exacerbate gender inequalities and slow the rate of progress towards meaningful change. Meanwhile, the COVID-19 pandemic is having devastating health and economic consequences on communities across the world, threatening to reverse the advances made in recent years towards gender equality including digital gender equality. Many women and girls will continue to be excluded from the digital economy and unable to benefit from the opportunities offered by digital technologies.

The [2020 State of Women in Tech and Start-Ups survey](#) found that 70% of women working in tech feel they have been treated differently at work owing to their gender, while only 11% of men in tech feel this way. The survey results indicate similar findings where it concerns incidents of harassment and sexual harassment with 46% of women working in tech reporting to have experienced harassment compared to 11% of men and 43% of women working in tech reporting to have experienced sexual harassment compared to 10% of men. In the #MeToo era, such a statistic speaks to the growing need for bold and decisive action to bridge the digital gender divide in the tech sector. Increased participation of women in the digital economy is critical for women's full participation in society and for long-term sustainable economic development.

In line with the objectives of the [EQUALS-EU project](#) which aims to build capacity in gender-inclusive innovation in Europe and partner countries worldwide, the [first public EQUALS-EU Colloquium meeting](#) aimed to dispel stereotypes and foster a gender inclusive innovation ecosystem through targeted discussions around key traits and skills needed to empower women in the digital age.

Over 100 experts from the mobile industry, academia, civil society and international organisations reflected on the modern-day challenges to championing female leadership in tech. They were encouraged to share best practices and experiences from among their sectors and discuss the current state of the digital leadership gap in Europe and across the Eastern partnership alongside the challenges and solutions to bridging this gap.

Following the main plenary session, participants were split into three working groups to brainstorm further and reflect on the challenges and solutions to fostering digital rights, access to technology and healthcare provision, as well as leveraging Science, Technology and Innovation skills for gender equity and building strategic communication skills to promote gender equity objectives. The meeting was hosted by GSMA alongside Oslo Metropolitan University, University of Haifa, University Hospital Cologne, Middle East Technical University, and the Institute of Economics of Latvian Academy of Sciences. It was supported by a number of EQUALS-EU Consortium Members including Kharkiv National University of Internal Affairs, The Graduate Institute of International and Development Studies, United Nations University and University of Valencia.

The discussions were inspired by [EQUALS Perception of Power: Championing Female Leadership in Tech](#) publication which examined the ways in which men and women in middle- and senior-level management positions from across the mobile and tech industries define leadership, with a particular focus on gender differences in leadership perception and self-perception.

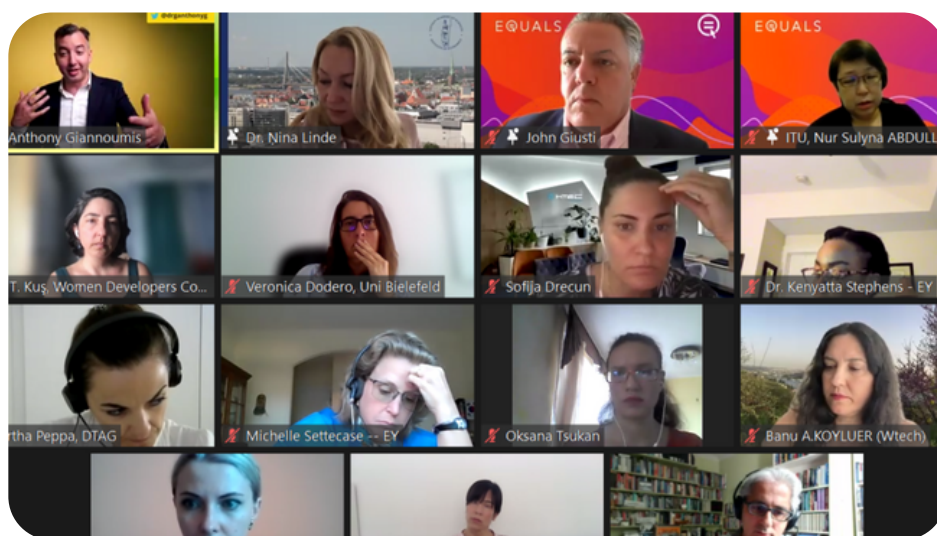


**WOMEN IN TECH: BREAKING DOWN
BARRIERS TO FEMALE LEADERSHIP**

CHAMPIONING FEMALE LEADERSHIP IN THE DIGITAL AGE



The event was opened by **Dr Anthony Giannoumis**, Associate Professor at Oslo Metropolitan University and **Belinda Exelby**, Head of International Relations at the GSMA and Chair of the EQUALS Steering Committee, who discussed the role of the [EQUALS Global Partnership for Gender Equality in the Digital Age](#) as the largest international platform bringing the public and private sector together to close the digital gender gap.



Welcome remarks by Dr Anthony Giannoumis

The opening remarks provided context to the meeting by introducing the EQUALS-EU project, which aims to create smart, sustainable and inclusive innovation ecosystems by building capacity and expanding networks for women and girls in social innovation and entrepreneurship. It is anchored in the gendered innovation process and provides a key opportunity to fulfil EU Member States Declaration of commitment to women in the digital space.

In her opening remarks, Ms Exelby referred to the [EQUALS Perceptions of Power: Championing Female Leadership in the Digital Age](#) pilot study led by the GSMA and Oslo Metropolitan University from which the event borrowed its title. The study explored how men and women in middle and senior management level positions, across the mobile and tech sectors, define leadership, with a particular focus on the gender differences in leadership perception. The report presents a number of recommendations for concrete actions that public and private sector companies can undertake to encourage the advancement of women in the digital economy; these were referenced throughout the meeting.

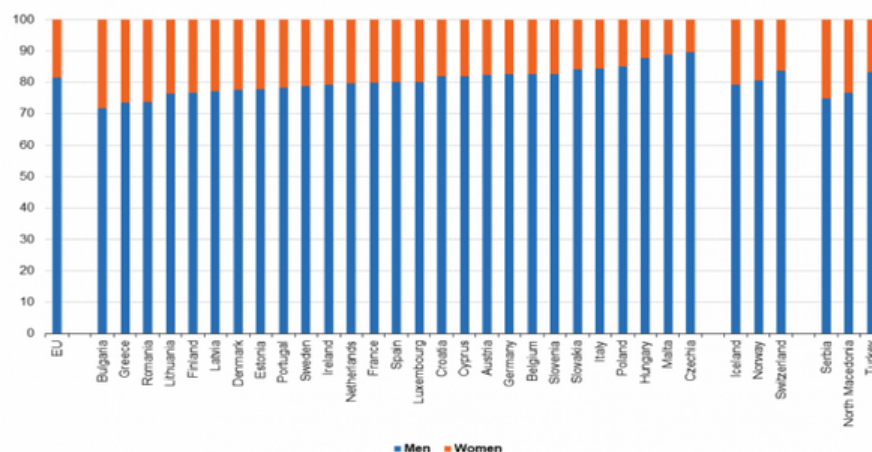


Ms Belinda Exelby during her welcome remarks

The event continued with a panel discussion on women's leadership in information and communication technology moderated by **Dr Nina Linde** from the [Institute of Economics of Latvian Academy of Sciences](#). The panellists were **Nur Sulyna Abdullah**, Chief of the Digital Knowledge Hub Department at the Telecommunication Development Bureau (BDT) of the [International Telecommunication Union](#) (ITU), **John Giusti**, Head of Advocacy and Chief Regulatory Officer at [GSMA](#), **Dr Anthony Giannoumis**, Associate Professor at [Oslo Metropolitan University](#) and **Mercy Njue**, Founder of Botlab Kenya.

Speakers discussed the current state of the digital leadership gap in Europe (please see Eurostat graphic below) and across the world, obstacles that rising female leaders in the digital economy face, why championing female leadership in tech matters, and how a more inclusive tech industry in which diverse leadership styles are welcome can be fostered.

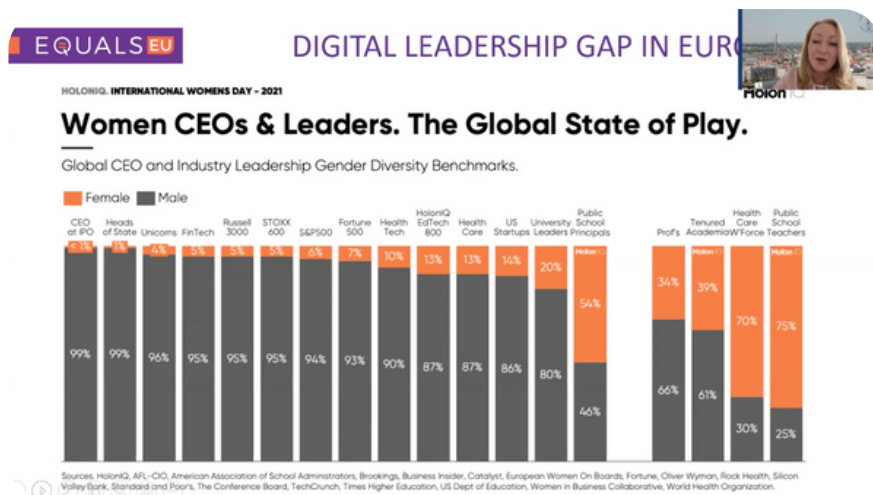
Distribution of ICT specialists by sex, 2020 (%)



Note: Details on ICT specialists data broken down by sex and estimated by Eurostat are available on Eurobase.
Data for Germany: provisional.
Source: Eurostat (online data code: isoc_sks_ittps)

eurostat

Some of the key data highlighted pointed out that only 7% of CEOs in Fortune 500 companies are women and only 3% of these CEOs are women of colour (HolonIQ). Furthermore in global economies, women were 24% more likely to lose their jobs during the COVID 19 pandemic compared to men. If this persists, global GDP could suffer an over 1-trillion USD loss by 2030. Furthermore panelists raised the fact that only 5% of women lead fintech companies while less than 1% are CEOs of Tech IPOs.



In particular, much attention was devoted to the fact that the gender gap in the tech sector is not just a development issue as it has a significant impact in terms of revenue, customer and worker loss for the private sector. As such, diversity is paramount to ensuring the sustainability of business. This cannot be just a “tick-the-box” exercise. It has to be an actual change promoted by substantive empowerment: empowerment to thrive within one’s place in a company. As customers focus and demand more Environmental, Social and Governance (ESG) developments, companies will be rewarded for improving in these fields and positive changes will follow.

"Why are women in technology important? Technology has such an impact on everything today. We need to make sure that the way technology is made can have a positive impact for all; in order to achieve that, we need to hear all voices, including those of women."

Nur Sulyna Abdullah, ITU

Speakers also agreed that it's important that the focus is not just at the top: what happens throughout the entire organisation is just as important. It's therefore necessary that employees, whatever their position in an organisation is, feel empowered and supported in their careers. It's important to go beyond targets, and make sure that women in leadership positions are empowered in their roles and bring the maximum of their skills to the table.

There is also a need to look beyond just the company culture and focus on diversity efforts exercised by customers and suppliers.

"The mobile industry realises the economic and social benefits increasing female leadership and representation in ICT industries can deliver and, in fact, many of our mobile operators are taking decisive action globally to level the playing field."

John Giusti, GSMA

Based on findings produced by the [EQUALS Perceptions of Power: Championing Female Leadership in Tech Research](#), four recommendations were highlighted as to how best practice at promoting and retaining women in positions of leadership across the mobile and tech industry can be fostered:

- Acknowledging the range of transformational leadership styles and what they bring
- Providing incentives for women to develop effective leadership skills
- Investing in mentorship and training
- Increasing research into factors that affect leadership equity and fairness

Additionally, panellists reached the following conclusions:

- In the long run, gender inclusivity needs to be promoted through the mainstreaming of gender policies and working with governments is therefore a must.
- The private sector needs to support impactful initiatives which focus on digital skills for girls and women and bridge the gender digital divide.
- There needs to be an ecosystem which promotes gender mainstreaming as an important part of policy and regulation.
- On a more strategic level, there needs to be a talent pipeline which exists outside of the educational space and which continues to elevate the most marginalised groups



**WOMEN IN TECH: BREAKING DOWN
BARRIERS TO FEMALE LEADERSHIP**

WORKSHOP 1: STRATEGIC COMMUNICATION TO PROMOTE GENDER EQUITY: TRANSLATING OBJECTIVES INTO PRACTICE



EXECUTIVE SUMMARY

This workshop was hosted by the [University of Haifa](#) and aimed to help participants reflect upon the challenges and problems that they face in their organizations or social networks related to gender equity. These challenges were broadly grouped into issues related to hiring, mentoring and promotion.

Participants were offered a broad and interesting perspective on gender equity objectives, and identified a range of specific challenges, including an organizational tendency to utilize male experts, lack of female representation in financial and IT departments and in leadership positions (both in academia and in the private sector), and the need for mentoring programs for women and particularly women from minority groups.



SETTING THE SCENE



Strategic Communication Program: The art and science of translating big ideas into **measurable, achievable objectives that can be implemented for change.**

- **Objectives:** Promote gender equity goals - Hiring, mentoring/retention, promotion/leadership
- **Formative research:** What should be done? What can you do? Who should you target?
- **Behavior change:** What decision elements are relevant to motivate people and systems to change? How would you measure change?

Other issues and case studies related to the need for greater transparency regarding wage gaps within the organization, increasing awareness and appreciation for diverse leadership styles, and the need to increase recruitment of women for technical roles. For each case study, participants considered ways in which they could define and influence the objective, using a range of constructs and approaches, as well as alternative ways in which they would measure change for that objective.

KEY MESSAGES

During the first stage of the workshop, participants were asked to define specific, feasible and measurable objectives (SMART) that can be applied within their organization to promote gender equity. Participants were asked to focus on issues that they care about, and have a strong motivation to change after considering 'pain points' within their organizations.

The **first key message** was that it is not enough to want to improve gender equity; it is necessary to construct specific and measurable objectives within a clearly defined time frame. The participants applied this approach to define objectives using the Miro board that was prepared for the workshop. Following this exercise, the group reconvened to discuss their objectives and receive feedback to help them further define their objectives when this was needed.

The **second key message** was that it is necessary to think about who is in a position to bring about the desired change to promote gender equity, and what their motivations and perceptions may be. In addition, participants were asked to think about the stakeholders (people or groups) that may be affected (positively or negatively) by the objective, and whether this was the same group that had the power to influence the organizational change. Participants then used the Miro board to map out the relevant stakeholders for the objective that they had defined previously.

The group then gathered to discuss the stakeholders and target populations and explain why these were relevant for their objective. These stakeholders included Human Resources and administration, policy makers, management, senior research faculty, board members, heads of departments and funding organizations, as well as young women in the tech sector.

The third stage of the workshop built on the first stages by introducing a logic model of behavioral change, introducing constructs from theories in behavioral science and persuasion to further the participants' understanding of how they could influence their target population, and increase the likelihood of achieving their objective. The **third key message** was that behavior change is more likely to occur when you identify the key predictors of the behavior, and provide information that targets underlying beliefs and obstacles to change. If you want people to help you, you need to give them a reason to do so. Reasons for change, and elements that influence behavior vary by individual and context. These can include incentives, perceived benefits to the organization or person who is helping, perceived efficacy to adopt the behavior, perceived social norms, shared values or identity, or other factors.

Dr. Lewis provided examples of constructs that may predict behavior and how these may be targeted using communication, and asked the participants to apply one or more of these constructs to their own behavioral objective.

The participants then applied these constructs using the Miro board, and reconvened as a group to discuss the different influence approaches that they could use in their own organizations.

The workshop emphasized key solutions to promoting gender equity through the design of strategic communication-based objectives. The participants defined solutions using constructs from theory and research on behavior change and persuasion. These constructs map on to the underlying cognitive beliefs and decision elements that are likely to influence behavior change. The workshop offered a high-level overview of this complex process, to provide relevant tools for promoting gender equity within the context of hiring, promotion and mentoring.

“A diverse and inclusive workforce is more sustainable, reliable and makes financial and economic sense”

Each participant was supported in applying these constructs to their own objectives, and identifying solutions that matched their unique circumstances and interests. It is important to note that the strategic objectives represent a positive step towards greater gender equality, but that the impact may also be modest and incremental, which should be taken into account when defining objectives.

The subsequent discussion also touched upon the issue of ethics and the need to ensure that persuasion is not coercive. According to this approach, the target audience must be free to decide whether they adopt the recommended behavior or not, without facing adverse effects if they decline. Finally, the participants discussed measurement and evaluation of the objective, and how participants may be able to measure change in gender equity, based on their defined objective.

The workshop wrap-up touched on the main points in the process of strategic communication, and elicited feedback from participants about useful concepts they could adopt, as well as challenges that they anticipate for implementation.

BARRIERS/CHALLENGES

Participants identified a range of different barriers and challenges related to gender equity in their organizations. These ranged from a lack of transparency in hiring processes, to “glass ceilings” for women in attaining key leadership roles across industry and academia, in addition to broader concerns about how to design and implement truly meaningful and impactful mentoring programs. Much emphasis was also put on the need for an intersectional vision when constructing strategic communication campaigns, which takes into account factors such as race, ethnicity, age, and socioeconomic status, which may intersect with gender to influence equity outcomes.

Participants defined specific objectives in hiring, such as:

- To increase the proportion of women hired in the finance and IT departments by 25% by 2023.
- To increase the number of female faculty hired at the university from 20% to 50% within 5 years.

Promotion and retention objectives included:

- To increase the proportion of women who are promoted to senior positions (i.e. professors) at the same rate and ranks as that of men by 15% from 2022-2024.
- To make the salary grid and range for hiring transparent and public by having leaders push for this initiative over the next year.
- To increase the proportion of women in technical roles from 15% to 30% within a year.

Specific objectives in mentoring included:

- To engage male senior colleagues in mentorship programs to mentor female colleagues.
- To establish a formal mentoring program that provides mentoring for women hired during the last 3 years by senior staff members, with the goal that at least 40% of all women hired will participate in the program for at least one year.
- To increase the resources for mentoring for women to ensure meaningful representation within the organization by 15% over the next year.

Having identified these objectives, the workshop’s main focus was to find implementable solutions to achieve them, adapted to the participants’ unique organizational environment.

RECOMMENDATIONS

“We need to move beyond paying lip service to mentorship schemes which supposedly promote women, minorities and equality. These programs must be matched by real-world allocation.”

- Adopt greater transparency around hiring processes, reporting on wage gaps, promotion criteria for high-level positions, etc.
- Shift resource allocation within the organization to support women at different stages of their career (e.g., mentorship).
- Increase the number of women in leadership roles at all levels of the organization (e.g. moving from disproportionate numbers of women present to ensuring that women make up at least 50% of an Executive Board).
- Leverage positive social norms by presenting examples of similar programs in other organizations that can provide inspiration and motivation for change.
- Include women in networks where men are typically involved, at times that match their schedules (such as morning or early afternoon).
- Showcase examples of transformative female leadership within the organization.
- Establish a group of at least 5 executive mentors to support female start-up professionals for at least one year (through the Human Resources department).
- Resolve potential issues of organizational backlash induced by a women’s only mentorship scheme by implementing mixed-gender mentoring. This approach can include an option to select a specific mentor (which aids in intersectional goals as well).

These recommendations were endorsed by participants from different sectors, and from different countries and stages of their careers, which suggests that gender equity challenges are not specific to one sector. The picture in the bibliography section is best utilized in the body of the report.



**WOMEN IN TECH: BREAKING DOWN
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WORKSHOP 2: WOMEN'S DIGITAL RIGHTS IN HEALTHCARE



EXECUTIVE SUMMARY

This workshop was hosted by [University Hospital Cologne](#) and aimed at examining the link between gender equality and digital rights in healthcare. Gender equity is of utter importance, particularly in the digital age. All humans deserve the same rights, including a right to education and healthcare, regardless of their gender. Digital rights refer to the ability of people everywhere to have free and open access to information and communication technology (ICT). Women's digital rights have become increasingly important throughout the course of the pandemic and in light of the growing influence of the digital era.

This is particularly the case when it comes to access to mobile technology as mobile has the power to transform lives. It can help empower women, making them more connected and safer, and providing access to information, services and life-enhancing opportunities, such as health information and guidance, financial services and employment opportunities, often for the first time. Mobile also has the potential to contribute positively to protecting women's human rights and to strengthen their economic, social and political empowerment and development.



The [latest estimates from the ITU](#) (ITU, 2019) suggest that women globally are 17% less likely than men to have internet access. The research also highlights that this gap is most pronounced in Least Developed Countries (LDCs), where women are 43% less likely to use the internet and where only one in every seven women uses the internet compared with one in every five men.

At the same time, for most of the world's population, mobile is the primary way to access the Internet. A [recent GSMA](#) study (Mobile Gender Gap Report, 2021) revealed that whilst now over half of women across low and middle income countries (LMICs) use mobile Internet, women still represent the majority of the unconnected, with 933 million women still not using mobile Internet. Women in these markets are therefore 15% less likely than men to use mobile Internet.

Addressing the digital gender divide and barriers related to access, knowledge and skills, safety and security and relevance of content is therefore critical and highlights the need for global digital rights and digital protection especially for women and girls.

The COVID-19 pandemic has exacerbated existing inequalities in almost all areas of life, both in Europe and beyond, further broadening the gender gap which will take an estimated 136 years to close. This has increased the urgency of reaching women and girls with digital technology, not least mobile technology as a mobile phone is proving as a vital tool for sharing information about the pandemic, supporting livelihoods and enabling remote access to critical services such as healthcare and education. At the same time many challenges remain around the use of digital technology for the promotion of healthcare for women in particular .

The objective of this workshop was to explore the expansion of the current focus on digital rights (i.e. the “iceberg model”) and to identify ways of improving women's interaction with healthcare and health-related information/technologies in a protected, free and self-determined digital environment.

Gender equity and the promotion of digital rights for women in healthcare is a fundamental issue in the digital age. It is therefore essential to ensure the protection and promotion of digital rights and to support gender equality in the health sector.

KEY MESSAGES

Participants agreed that to overcome the gender gap in digital rights and increase gender equity in healthcare the frameworks for Access, Education, Training, Governance and Digital Health Technologies are crucial.

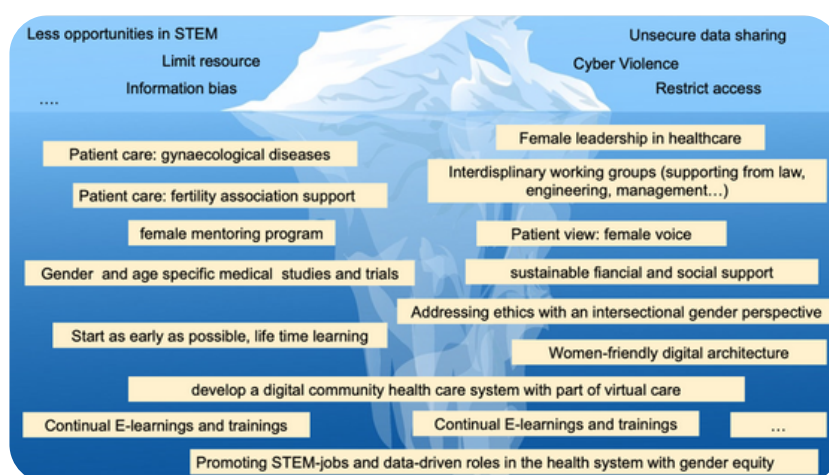
Affordable access to the Internet and ICT infrastructure should be a universal objective alongside reputable and legitimate digital communication resources so that everyone can benefit from e-healthcare resources.

Additionally, there needs to be a provision of safe local spaces for women's digital activities (such as easily accessible and safe Internet rooms), and safe digital health care platforms for more advanced access.

Women's motivation for STEM studies needs to be fostered from an early age with access to IT health care courses provided, ideally free of charge.

Healthcare work should become as smart as possible. The experiences and achievements during the pandemic have reiterated the necessity of providing solutions for both healthcare providers and beneficiaries.

At the same time, approaches and solutions needed to strengthen women's digital rights in healthcare and make sustainable healthcare technologies available, must be adjusted according to the needs (ie gender, age, role). For example, the needs of nurses are expected to be different from the needs of family caregivers.



Privacy and other ethical aspects of patient data-usage and use of digital platforms has become a major issue in society and must be addressed on a governance level.

Most megatrends in medicine profit from translational medicine. The inclusion of life sciences and health/social data science into medicine has pushed digital transformation, innovative technologies, and better strategies (novel testing methods, vaccinations), which we use to fight the pandemic.

BARRIERS/CHALLENGES

Participants identified a number of barriers preventing gender equity in healthcare. Among those were the lack of transparency around data usage, lack of privacy or overall restrictions when using digital platforms to exercise reproductive health rights, lack of uptake of digital health studies among women particularly from across rural areas, as well as insufficient integration of intersectional gender perspectives throughout the patient journey: from decisions around the dosage of relevant medications to various data collections.

Experts participating in the workshop agreed that digital inequalities have worsened as the COVID-19 pandemic has highlighted the unequal access to digital technologies as well as the gap between communities from various socioeconomic backgrounds. As such community cohesion can and has been affected by the exclusion from digital rights giving rise to social conflicts. Another fundamental issue is patients' medical data which remains a great challenge as on the one hand such data is needed to prevent and treat diseases while on the other it needs to be guarded for privacy and ethical reasons.

RECOMMENDATIONS:

“To overcome the gender gap in digital rights and increase gender equity in healthcare the frameworks around Access, Education, Training, Governance and Digital Health Technologies are crucial.”

Participants offered broad perspectives on gender equity in digital rights in the health sector, in particular in relation to the COVID-19 pandemic. A number of challenges and opportunities were discussed, such as the need for mentoring programs for women and particularly women from minority groups alongside supporting gender specific medical research and trials.

In particular the discussions yielded the following recommendations:

- Encourage safe and equal access to quality Internet (digital resources and information), connectivity and relevant infrastructure, not least in rural areas.
- Facilitate access for people from underprivileged backgrounds to e-healthcare and telemedicine.
- Provide better curation of information sources for women so that they can stay better informed about their health.
- Address legal frameworks that entrench inequality.
- Invest in education including improvement of both digital education opportunities and training on digital literacy.
- Include women from low income backgrounds in ICT courses so as to improve access to digital health.
- Promote STEM-jobs and data-driven roles in the healthcare system.
- Improve global digital health governance by investing in digital health literacy and ethical and gendered development.
- Support mechanisms for innovation development and real time policy platforms allowing for citizens-governments dialogues on gender equity in healthcare.
- Optimize product design systems for digitalization in the healthcare sector by taking into account existing legislative frameworks and barriers to access.
- Support gender and age specific medical research and trials.
- Provide training to all employees about etiquette when using digital technologies.
- Invest in additional adaptation of Electronic Health Records (EHRs) and clinical pathways for women.
- Offer courses for female employees on how to stay safe online.
- Develop a digital community health care system which includes virtual care.
- Address ethical questions with an intersectional gender perspective.
- Provide certified programme courses for health tech product managers specialized in women health.
- Fund gender bias studies in medicine adherence and clinical pathways including on how legislation can help with the implementation of newly designed pathways.
- Provide data protection and health privacy information training.
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**WOMEN IN TECH: BREAKING DOWN
BARRIERS TO FEMALE LEADERSHIP**

WORKSHOP 3: LEVERAGING STI SKILLS FOR GENDER EQUITY



EXECUTIVE SUMMARY

This workshop was hosted by [Middle East Technical University](#) and aimed to dispel harmful gender-based stereotypes in the science, innovation and technology field and co-create ways to position women as ICT leaders, creators, and entrepreneurs.

Global challenges like the current COVID-19 pandemic have underlined the critical role that science and women's empowerment play in driving progress across the Sustainable Development Agenda. The pandemic has amplified inequalities for girls and women when it comes to Science, Technology and Innovation (STI) educational and professional opportunities, and underlined the urgency of taking decisive action. Obstacles related to access, affordability, lack of education, and inherent biases and sociocultural norms curtail women and girls' ability to benefit from the opportunities offered by processes of digital transformation.



Leveraging Science, Technology and Innovation
Skills for Gender Equity

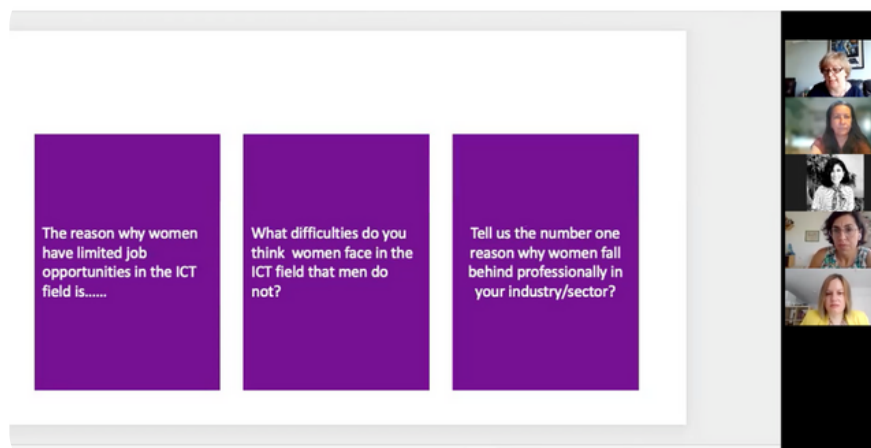
ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

If you could time travel, would you go back in time to meet your
ancestors, or forward in time to meet your descendants?



It is therefore not a surprise that women hold a smaller number of leadership positions in the ICT sector compared to men, and are on average paid less, which is a by-product of longstanding gender segregation throughout the labour market. At 15 years of age, boys are 10 times more likely than girls to become ICT professionals and at the same time just 3% of students joining ICT courses across the globe are women ([WEF, 2020](#)). However, this challenge can also be used as a stimulator for change towards gender equality in ICT.

Using the [Feminist Participatory Action Research](#) process (ie a process whereby participants use a gendered focus to reflect upon, investigate, and challenge the conditions of their own reality), participants helped identify the barriers and most urgent action areas and recommendations needed to advance gender equity in the digital economy.



KEY MESSAGES

Participants agreed that harnessing digital technologies is of great importance as it can help young girls and women develop critical digital skills and enable them to pursue careers in tech. Connectivity between people, countries and regions is key to overcoming gender inequality as well as economic and regional disparities.

The intersectionality between STEM and STEAM was also highlighted as it reveals the importance of an interdisciplinarity focus when developing digital technologies alongside the necessity for inclusive training and mentorship programmes.

Last but not least, workshop experts acknowledged that there is an urgent need to defy gender stereotypes in the ICT sector so that ICT education for girls becomes the norm rather than the exception.

BARRIERS/CHALLENGES

Seven key challenges were identified by the participants:

- Low number of young women and girls pursuing educational opportunities and subsequently choosing to go into the ICT career field results in a limited talent pipeline.
- The unconscious bias and very stubborn and dissuasive gender stereotypes make girls and women feel unwelcome and unsafe in the ICT sector. As such lack of self-advocacy is one of the key challenges that women and girls face.
- Leaving the workforce temporarily, be it on maternity leave or because of a shift in professional priorities or lack of promotion, sets women back.
- Unequal distribution of responsibilities related to childcare and household duties limit women's opportunities for ongoing professional growth.
- There is a lack of relatable female role models in the tech sector alongside gender transformative digital skills development programmes.
- Characteristics often defined as key for breaking into the ICT sector are ones that tend to be attributed to men, such as being brave, confident and competitive. This reinforces patriarchal language as the constitutive of the inequalities.
- The conventional educational system does not provide sufficient insights and motivation for young women to want to pursue career opportunities in the ICT sector.
- The lack of mentorship programmes which would connect young women and girls to mentors who can show them what a tech expert looks like in practice is an important barrier; creating a cohort of people who share with each other their experiences and manifest opportunities for a different group of women with varying background, skills and expertise is valuable.
- The geographical differences in a country and/or regional disparities across the globe are also determining factors in the emergence of gender biased attitudes against women.

RECOMMENDATIONS

“Women feel much more competent in their career in the ICT field if there is greater gender parity”

Participants offered a variety of suggestions to overcome gender inequalities in the ICT sector and to establish a ground for gender parity.

- Establishing regular contact with women who leave the workforce temporarily and guaranteeing them the same or at least equivalent position when they return is of critical importance to support their professional development.
- The complementarity between STEAM and STEM should be emphasized more by big tech companies in order to show young women that there are career opportunities even if they do not have a degree or training in STEM. This sort of strategy underlines the contribution from the arts and other creative disciplines and will therefore serve to attract more women to the ICT sector.
- Increasing interest in STEM studies among girls, particularly throughout their adolescent years, is critical so as to instil computational thinking and problem-solving skills.
- Educate parents to change perceptions that these subjects are the preserve of men.
- Ensure that ICT studies are introduced as obligatory as part of the education process.
- Collaboration with universities and the public sector more widely is crucial for improving awareness about the role of women in the ICT sector and increasing the number of women pursuing STEM studies.
- To overcome the barrier that women end up with changing their professional priorities within the same sector, the growth strategies of companies should be more flexible and fluid so as to discourage them from leaving the sector and at the same time enable them to adapt to new conditions and opportunities.
- Creating a regional network of women across all levels would provide between the newcomers and the seniors a social and professional platform for dialogue, experience sharing and trust building.



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CONCLUSION



Focusing only on technical skills is not enough to reverse the negative trend for women's participation in the ICT sector. Providing adapted skills training for girls and women is just as important. Particularly, the development of soft skills, effective communication, leadership skills as well as self-confidence is key for women and girls to navigate barriers. Lifelong learning skills and adaptation are also very important as well as ensuring inclusive training programmes.

Additionally, actively working to change societal norms, discriminatory workplace cultures and investing in initiatives which target women's access to STEM careers, digital skills training and mentorship programmes by leveraging public-private sector partnerships are key.



Mentorship programmes can be particularly helpful for connecting women to mentors who can help them relate to female role models in the tech sector, boost their confidence and create a strong network of women in tech who can share their experiences with each other, provide peer support and manifest opportunities for a different group of women with varying background, skills and expertise.

Role models should also be visible to provide positive models for women. It is therefore necessary to engage with the influencers that are key in young women's lives and who can help to offset some of those barriers.

Furthermore, digital inclusion is critical. Women need to be included in all sectors to ensure that they have the same power and impact when it comes to influencing innovation, transformation and integration strategies across the

ICT sector, including digital healthcare governance. In fact women's digital rights in healthcare provide a great opportunity for championing female leadership in the digital age.

In the long run, gender inclusivity needs to be promoted through the mainstreaming of gender policies and working with governments is therefore a must.

The private sector also needs to support impactful initiatives which focus on digital skills for girls and women and bridge the gender digital divide and there needs to be an ecosystem which promotes gender mainstreaming as an important part of policy and regulation.

Last but not least, closing the digital gender divide must be a concerted action undertaken by all stakeholders and as such initiatives which bring the public and private sectors together, such as the EQUALS Global Partnership for Gender Equality in the Digital Age, are key.



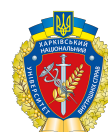
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BIBLIOGRAPHY



1. World Economic Forum (WEF) (2020), ["3 Things to Know About Women in STEM"](#)
2. United Nations Economic and Social Council (UNECSOC) (2020), ["Progress Towards the Sustainable Development Goals: Report by the Secretary General"](#)
3. Women Who Tech, ["State of Women in Tech and Start-Ups" Survey](#) (2020)
4. EQUALS Global Partnership for Gender Equality in the Digital Age (2020), ["Perceptions of Power: Championing Female Leadership in Tech"](#)
5. ITU (2019), ["Measuring Digital Development: Facts and Figures"](#)
6. GSMA (2021), ["The Mobile Gender Gap" Report](#)

LAYOUT AND DESIGN

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